

A high-level monthly briefing on operations and activities at the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions. Work at the lab supports the Department's business lines of environmental quality, energy resources, national security and science.

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## ■ ENERGY RESOURCES – Hydrogen-powered Vehicle Research Continues

The INEEL's lead role in the US Department of Energy's Advanced Vehicle Testing Activity – and its long-standing partnership with vehicle testing specialists Electric Transportation Applications and energy producer Arizona Public Service – have helped the INEEL establish a national presence in hydrogen-powered vehicle research. Along with its partners, the INEEL is working to create and improve the technology and infrastructure to support a viable hydrogen-powered transportation network. Already, the team has operated and tested a fleet of 12 hydrogen-powered vehicles for more than 170,000 miles out of a hydrogen fueling station in Phoenix. The INEEL also works with Argonne National Laboratory's Advanced Powertrain Research Facility to test the most advanced hydrogen-fueled internal combustion engines and vehicles and record their emissions.

## ■ ENVIRONMENTAL QUALITY – Tours of Eastern Snake River Plain Available

More than 150 people have participated in specialty INEEL tours of the geologic and hydrologic features in the Eastern Snake River Plain – and discussions about its underlying aquifer. Tour participants learn the details of ongoing scientific investigations, remedial actions and subsurface research and monitoring activities that will improve understanding of subsurface processes and contaminant movement. Tour guides review site operations and the contamination that resulted from former waste disposal practices. They also explain the subsurface cleanup challenges that lie ahead, and remediation technologies being used now and those contemplated in the future. Those interested in taking a tour can call the INEEL's Marilyn Manguba at 526-9969 or e-mail her at [mangma@inel.gov](mailto:mangma@inel.gov).

## ■ NATIONAL SECURITY – Specialized Aircraft Showcased in Southwest Idaho

Earlier this summer, five aircraft flew within the same two-kilometer airspace over southwestern Idaho and made history. The National Security Division led an integrated INEEL Autonomous Unmanned Aerial Vehicle (AUAV) flight team that simultaneously controlled a fleet of small planes as a proof of concept. The INEEL is evaluating the performance of the hobby-sized planes to support military missions and to potentially open new mission areas such as security, border patrol or weather data collection.

## ■ SCIENCE – INEEL Team Takes First Place in Competition

A member of the INEEL's Unmanned Ground Vehicle team and one of the lab's autonomous robots – affectionately known as "Jr." – took first place in the 2003 Mobile Rescue Robot Competition in Mexico. The objective of the contest was to work in a practical situation of critical importance where participants send robots into a simulated fallen structure to find human victims and direct rescuers to them. At the end of three days, the INEEL's human-machine team had found the most victims in the shortest time – on a test range that other teams couldn't navigate. The competition was held among seven teams from universities, colleges and research laboratories in conjunction with the International Joint Conference on Artificial Intelligence.

For more information, contact Brad Bugger at 208-526-0833